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MEMORANDUM TO MR. WHITSETT

COLORADO RIVER AQUEDUCT

Oct. 25, 1935

Full delivery capacity = 1,000,000 acre-feet per year

Assume 1/2 of this amount used and sold for domestic and industrial developments.

Project Cost - Initial (for 1/2 capacity) = $220,000,000
Ultimate (for full capacity) = $283,536,000,
which may be taken at $300,000,000, to be conservative.

Operating at initial 1/2 capacity, maximum annual cost is:

Interest (at 4%)	$ 8,800,000
Amortization (15th year)	6,100,000
Operation and Maintenance (including purchased power and water treatment)	5,600,000
	$20,500,000

Average cost for 500,000 A.F., therefore, = $41.00 per A.F.
(9.4¢ per 100 cu. ft., or 12.5¢ per 1000 gallons)

Operating at full capacity, maximum annual cost is:

Interest (at 4%)	$12,000,000
Amortization (after 15th year)	8,300,000
Operation and Maintenance	8,200,000
	$28,500,000

Average cost for 1,000,000 A.F. = $28.50 per A.F.
(6.5¢ per 100 cu. ft., or 8.7¢ per 1000 gallons);

but average cost of second 500,000 A.F. is only $16.00 per A.F., and if second 500,000 A.F. is sold for as low as $7.00 per A.F., the rate for the first 500,000 A.F. need be not over $50.00 per A.F.
(11.5¢ per 100 cu. ft., or 15.3¢ per 1000 gallons).

These rates compare with recent water rates in San Francisco of 38¢ per 1000 gal. (28.5¢ per 100 cu.ft., or $124.00 per A.F.) and San Diego of 27¢ per 1000 gal. (20.3¢ per 100 cu.ft., or $ 89.00 per A.F.).

C. C. Elder

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Length of Aqueduct	241 miles
Length of Distribution System	150 "
Length of Tunnel	91 "

Force Account	33 miles
Contract	58 "
Longest tunnel	18.3 "
San Jacinto Tunnel	12.7 "
Construction period	69 months

Length of Grade Conduit	55.7 miles
Length of Pressure line	28.4 "
Length of Lined Canal	65 "

Original Estimate of Total Cost	$220,000,000
Revised Estimate of Total Cost	209,420,000

Miles of tunnel driven to date	16.8 miles
Maximum progress per shift	10½ feet
Maximum progress in week per heading	315 "

Estimated demand on Aqueduct for all purposes

	All Purposes	Domestic & Industrial
1940	400 cu. ft. per sec.	300
1960	1000 " " " "	743
1980	1350 " " " "	1170

Sale price of domestic and industrial water necessary to meet all aqueduct costs

	Per ~~Cu.~~ Ft.	Per 100 Cu. Ft.
1940	$69.47	16 cents
1960	60.99	14 "
1980	52.23	12 "

Existing Water Rates	Up to 1000 cu.ft.per mo.	Over 1000 cu.ft.per mo.
Los Angeles	13	7
San Francisco	36.6	.22
Average for member Cities of District	15	12

43,560 □' in a ft. Gal. 327,000 in a foot